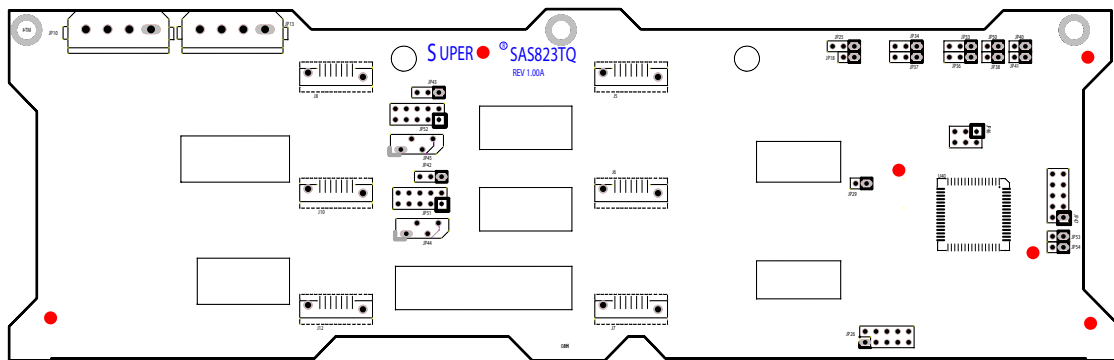




SAS 823TQ Backplane

USER'S GUIDE

Rev. 1.0a

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Chapter 1

Safety Guidelines

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

1-1 ESD Safety Guidelines

Electric Static Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the RAID card by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the card and peripherals back into their antistatic bags when not in use.

1-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

1-3 An Important Note to Users

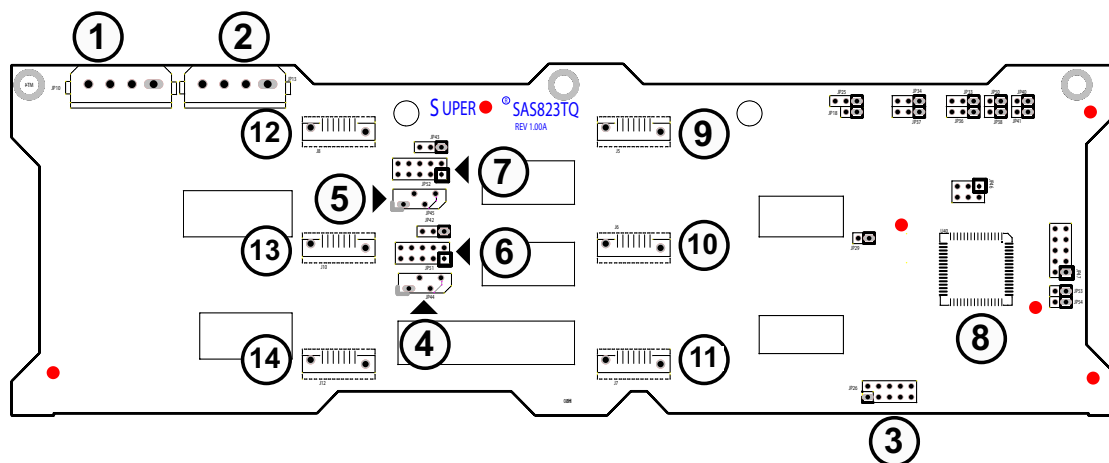
- All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

Notes

Chapter 2

Jumper Settings and Pin Definitions

2-1 Front Connectors and Jumpers



Front Connectors

- #1. JP10: 4-Pin PWR Connector
- #2. JP13: 4-Pin PWR Connector
- #3. JP26: ACT_IN (Activity In LED Header)
- #4. JP44: I²C Connector#1
- #5. JP45: I²C Connector#2
- #6. JP51: SideBand #1
- #7. JP52: SideBand #2
- #8. MG 9072 Chip
- #9. SAS Port #0
- #10. SAS Port #1
- #11. SAS Port #2
- #12. SAS Port #3
- #13. SAS Port #4
- #14. SAS Port #5

2-2 Front Connector and Pin Definitions

#1/#2. Backplane Main Power Connectors

The 4-pin connectors, designated JP10 and JP13, provide power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector (JP10 and JP13)	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

#3. Activity LED Header

The activity LED header, designated JP26, is used to indicate the activity status of each SATA drive. The Activity LED Header is located on the rear of the backplane. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

SATA Activity LED Header Pin Definitions (JP26)			
Pin #	Definition	Pin #	Definition
1	ACT IN#0	6	ACT IN#4
2	ACT IN#1	7	ACT IN#5
3	ACT IN#2	8	ACT IN#6
4	ACT IN#3	9	ACT IN#7
5	Ground	10	Empty

#4/#5. I²C Connectors

The I²C Connectors, designated JP44 and JP45, are used to monitor HDD activity and status. See the table on the right for pin definitions.

I ² C Connector Pin Definitions (JP44 and JP45)	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

#6/#7. Sideband Headers

The sideband headers are designated JP51 and JP52.

For SES-2 to work properly, you must connect an 8-pin sideband cable to JP51 and JP52. See the table to the right for pin definitions.

Sideband Headers (JP51 and JP52)			
Pin #	Definition	Pin #	Definition
2	Backplane Addressing (SB5)	1	Controller ID (SB6)
4	Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	SDA (SB1)
8	Backplane ID (SB7)	7	SCL (SB0)
10	No Connection	9	No Connection

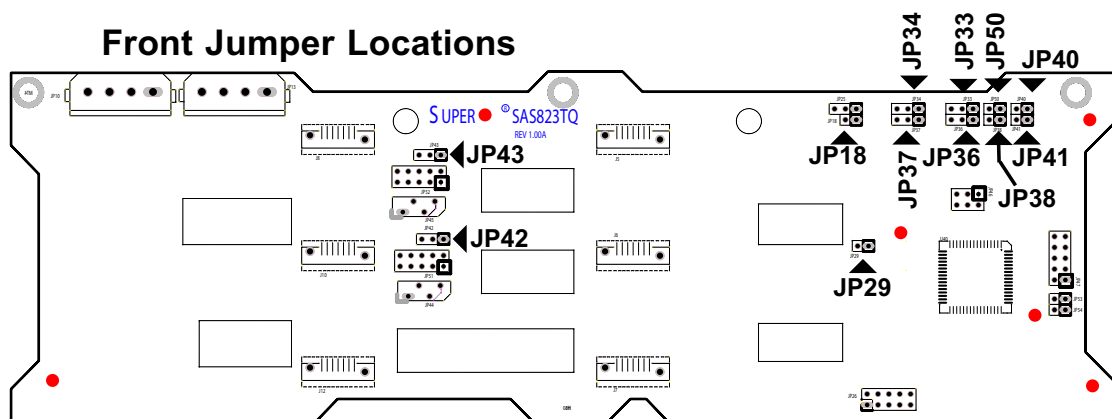
#8. MG9072 Chip

The MG 9072 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.

#9-#14. SAS Ports

The SAS/SATA ports are used to connect the SAS/SATA drive cables. The 6 ports are designated #0 - #5.

2-3 Front Jumper Locations and Pin Definitions



I²C and SGPIO Modes and Jumper Settings

This backplane can utilize I²C or SGPIO. I²C is the default mode and can be used without making changes to your jumpers. The following information details which jumpers must be configured to use SGPIO mode or restore your backplane to I²C mode.

I ² C Mode (Default)		
Jumper	Jumper Setting	Note
JP18	Open	Closed: Buzzer Reset (Default)
JP29	Open	Closed: Chip Reset (Default)
JP33	2-3	Controller ID #1
JP34	1-2	Backplane ID #1 1-2: ID#0 2-3: ID#1
JP36	2-3	Controller ID #2
JP37	2-3	Backplane ID #2 1-2: ID#0 2-3: ID#1
JP38	Closed	I ² C Reset #2
JP40	Open	I ² C Reset _SDOUT#1
JP41	Open	I ² C Reset _SDOUT#2
JP42	2-3	I ² C Backplane ID _SDIN#1
JP43	2-3	I ² C Backplane ID _SDIN#2
JP50	Closed	I ² C Reset #1

SGPIO Mode (Only)		
Jumper	Jumper Setting	Note
JP18	Open	Closed: Buzzer Reset (Default)
JP29	Open	Closed: MG9072 Reset (Default)
JP33	1-2	Controller ID #1
JP34	1-2	Backplane ID #1 1-2: ID#0 2-3: ID#1
JP36	1-2	Controller ID #2
JP37	1-2	Backplane ID #2 1-2: ID#0 2-3: ID#1
JP38	Open	I ² C Reset #2
JP40	Closed	I ² C Reset _SDOUT#1
JP41	Closed	I ² C Reset _SDOUT#2
JP42	1-2	I ² C Backplane ID _SDIN#1
JP43	1-2	I ² C Backplane ID _SDIN#2
JP50	Open	I ² C Reset #1

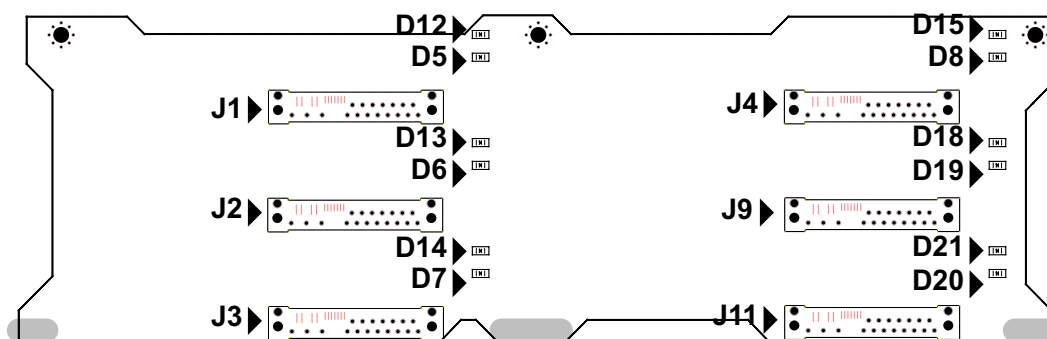
SAS Port Connections in I²C and SGPIO Modes

Remember the following when connecting this backplane:

- In I²C mode, I²C #1 (JP44) corresponds with SAS ports #0, #1, #2, and #3. I²C #2 (JP45) corresponds with SAS ports #4 and #5. If you connect the SAS ports out of order, you will not be able to easily identify drives using the LED function.
- In SGPIO mode, Sideband #1 (JP51) corresponds with SAS ports #0, #1, #2, and #3. Sideband #2 (JP52) corresponds with SAS ports #4 and #5. If you connect the SAS ports out of order, you will not be able to easily identify drives using the LED function.

2-4 Rear Connectors and LED Indicators

Rear Connector Locations



Rear Connector/LED Indicator Descriptions

823TQ Rear SAS Connectors	
Connector	SAS Drive Number
J1	SAS#0 HDD (Connected to HDD)
J2	SAS#1 HDD (Connected to HDD)
J3	SAS#2 HDD (Connected to HDD)
J4	SAS#3 HDD (Connected to HDD)
J9	SAS#4 HDD (Connected to HDD)
J11	SAS#5 HDD (Connected to HDD)

823TQ Rear LED Indicators	
Connector	Hard Drive Activity and Failure LEDs
D12	SAS#0 Activity LED (Connected to HDD)
D13	SAS#1 Activity LED (Connected to HDD)
D14	SAS#2 Activity LED (Connected to HDD)
D15	SAS#3 Activity LED (Connected to HDD)
D18	SAS#4 Activity LED (Connected to HDD)
D21	SAS#5 Activity LED (Connected to HDD)
D5	SAS#0 Failure LED (Connected to HDD)
D6	SAS#1 Failure LED (Connected to HDD)
D7	SAS#2 Failure LED (Connected to HDD)
D8	SAS#3 Failure LED (Connected to HDD)
D19	SAS#4 Failure LED (Connected to HDD)
D20	SAS#5 Failure LED (Connected to HDD)